

COMMERCIAL SEALANT APPLICATIONS

When selecting a sealant for commercial applications, it is important to recognize its distinct features, characteristics, and tested performance attributes. It is equally imperative to differentiate between sealant applications used in commercial construction to ensure reliable joint sealant performance.

The two most common types of commercial sealant applications are Weatherproofing and Structural – each with varying requirements. For instance, while adhesive and movement capabilities are important in both, adhesive strength requirements are far greater for structural applications. Commercial buildings typically do not have height restrictions relative to weatherproofing sealants. However, sealants applied strictly, or primarily, for their adhesive properties (i.e., structural applications), require a specific set of load requirements based on a variety of needs, including but not limited to, structural height and design. For all commercial sealant applications, contact Henkel Technical support for review of intended use.

To qualify the use of a sealant in either one of these applications it is important to further distinguish the difference between Weatherproofing and Structural applications.

Weatherproofing applications provide an effective barrier which prevents the entry of moisture and water into the structure. To achieve successful weatherproofing results the following requirements must be considered:

- *Adhesive strength and characteristics* of a cured-in-place sealant against substrates for the specific weatherproof joint design.
- *Joint movement of a designed joint*: changes in material temperature, seismic movement, creep, shrinkage, and moisture-induced material movement.
- *Sealant movement capability*: the \pm percent value which indicates the amount of movement the sealant is designed to accept in extension and compression from its original cured joint width. The movement capability and expected joint movement must be coordinated.
- *Strict adherence to installation guidelines* found in ASTM C1193 (Standard Guide for Use of Joint Sealants) and sealant manufacturer instructions.

Structural applications require bonding of the window or curtain wall to the wall or metal framing system.

Defined as a structural joint, the sealant must be able to withstand ultraviolet radiation, weathering effects, wind load, and other stresses that transfer these effects to the metal framing system. When specifying, designing, and applying structural sealant the following must be considered:

- *Bite*: defined as the effective structural contact dimension of a structural sealant required on both the panel and frame faces to accommodate the required transfer of the loads.
- *Thickness*: defined as the minimum structural sealant dimension between the structurally bonded substrates (panel and frame) to facilitate the installation of the sealant and reduce stress of the structural sealant joint which results from differential thermal movements.
- *Deadload*: the weight a panel places on the structural sealant joint.
- *Strict adherence to installation guidelines* found in ASTM C1401 (Standard Guide for Structural Sealant Glazing) and sealant manufacturer instructions.

Henkel offers sealant technologies within its brand portfolios that fit a variety of weatherproofing applications. For instance, OSI® QUAD® MAX will provide reliable, durable, and consistent performance when used in many commercial *weatherproofing applications* and can be used as defined by this document and ASTM C1193.

Considering performance demands of *structural applications*, as stated above, OSI® QUAD® MAX cannot be used in structural applications stated in this document or ASTM C1401. For all commercial applications, contact Henkel Technical support for review of intended use, and for additional product information or to explore Henkel's full sealant portfolio, visit ositough.com, loctiteproducts.com, and gesealants.com.

DISCLAIMER The information and recommendations contained herein are based on our research and are believed to be accurate, but no warranty, express or implied, is made or should be inferred. Henkel recommends purchasers/users should test the products to determine acceptable quality and suitability for the intended use. All adhesive/sealant applications should be tested under simulated or actual end use conditions to ensure the adhesive/sealant meets or exceeds all required project specifications. Since assembly conditions may be critical to adhesive/sealant performance, it is also recommended that testing be performed on specimens assembled under simulated or actual production conditions.